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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/591,500 | 05/25/2007 | Kazuo Tagawa | 07481.0053 | 1464 |
| 22852 | 7590 | 05/05/2011 | | |
| FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413 | | | EXAMINER VASISTH, VISHAL V | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/591,500

Applicant(s)

TAGAWA ET AL.

Examiner

VISHAL VASISTH

Art Unit

1771

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 April 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicants' response filed on 7 April 2010 cancelled claims 1-12 and added new, independent claim 13. Neither applicants' amendments nor arguments addressed below overcome the 35 USC 103(a) rejection over Cohen et al. in view of Shimomura et al. set forth in the Office Action mailed on 07 December 2010 and, therefore, this rejection is maintained below.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al., US Patent No. 6,736,991 (hereinafter referred to as Cohen) in view of Shimomura et al., US Patent No. 6,231,782 (hereinafter referred to as Shimomura).

Cohen discloses a refrigeration lubricant comprising up to 99 wt% of a naphthenic mineral oil (Col. 3/L. 37-40), a hydrofluorocarbon refrigerant and a nonionic surfactant. The naphthenic mineral oils are made by contacting them with sulfuric acid and filtering with either clay or bauxite, which is a form of hydrotreatment and/or refining as evidenced below by Shimomura, to reduce sulfur and nitrogen-containing heterocyclic compounds and improve low temperature properties. The sulfur and nitrogen compounds have been reduced such that the total sulfur and nitrogen is at low levels 0.05 wt% or less and the %C_A of the naphthenic mineral oil is 14. Cohen also discloses that the kinematic viscosity of the mineral oils range from 13-100 cSt at 40 °C (Col. 3/L. 5-15/Table 1).

Cohen further discloses the presence of additional additives to formulate the finished refrigerating composition. Such additives include phosphorus compounds but not the specific phosphorus compounds of claim 1 (Col. 7/L. 3-4) and additional anti-wear additives and sulfur-containing extreme pressure agents (Col. 7/L. 1-11) but not phosphorothionates.

Shimomura discloses a refrigerator oil composition comprising, a major amount of a base oil preferably a mineral oil, 0.01 to 5.0 mass% of a phosphorus compound such as amine salts of acidic phosphorus esters (Col. 9/L. 23-31 and Col. 10/L. 13-21) and at least 0.1 wt% of a sulfur compound such as a phosphorothionate (Col. 12/L. 7-47).

Shimomura further discloses that the mineral oil is obtained by refining means such as solvent deasphalting, solvent extraction, hydrogenolysis, solvent dewaxing,

catalyst dewaxing, hydrofinishing, sulfuric acid washing and clay treatment to treat lubricant oil fractions obtained from the atmospheric distillation and vacuum distillation (as recited in claims 4-5) (Col. 2/L. 56-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the phosphorus and phosphorothionate compounds of Shimomura in the composition of Cohen in order to improve the wear resistance and load capacity of the composition (Col. 9/L. 23-25 and Col. 12/L. 7-8 of Shimomura).

Response to Arguments

5. Applicants' arguments filed on 4/7/2011 with respect to claim 13 have been considered and are not persuasive.

Applicants' first argue that Cohen in view of Shimomura does not disclose the beneficial results demonstrated by the instant application and therefore the instant application demonstrates unexpected results. This argument is not persuasive. In order to demonstrate unexpected results applicants must compare their formulations against the closest prior art, as well as, make sure that the claims are commensurate in scope with the data provided in the instant specification.

Applicants have not compared their formulations against the closest prior art therefore not demonstrating unexpected results.

Applicants have done a much better job in claim 13 of making the claims commensurate in scope with the data provided, however some issues still remain.

In the instant case, example oils 4-14 merely demonstrate that the higher concentration of additives the lower the coefficient of friction. For example, example oils 8-14 have the highest concentrations of C additives and consequently have the lowest coefficient of frictions. This is further exemplified by example oils 15 and 16 which the examiner is treating as comparative examples because they are outside the current claim limitations. By applicants own assertion the oiliness improvers (additive C) from the Tables of the instant specification do lower coefficient of frictions and therefore adding these additives to a base oil to lower the coefficient of friction is hardly unexpected. Also, none of the additional additives, namely B1 and C1-5 from the Tables 2-3 of the instant specification, are reflected in instant claim 1. Therefore, applicants have not demonstrated unexpected results across the full scope of the claims.

Applicants also argue that Cohen does not teach the sulfur content in the range as recited in instant claim 1, and applicants filed a Treatise titled, "Lubricants and Special Fluids" to further their argument. Applicants' argument is that the sulfur/nitrogen content of Cohen cannot be reduced without reducing the aromatics concentration. Applicants have not shown how much the aromatics would be reduced when the sulfur content is reduced, but merely that a reduction has to happen. This argument is also not persuasive. Even if it is shown that decreasing sulfur content when hydrofinishing a base oil also decreases the aromatics concentration of the base oil, applicants have not shown by how much or if there is a percentage that can be extrapolated by the data provided. It seems clear that although the properties change due to hydrofinishing that

these properties can be controlled. Also, Cohen in column 3 clearly states that the mineral oils are filtered to reduce sulfur and nitrogen contents and that the respective concentrations of both sulfur and nitrogen have been reduced to levels of 0.05% (500 ppm) or lower which clearly overlaps and encompasses the range as recited in claim 1. The full disclosure must be taken into account and not simply the example oils from Cohen. "In the case where the claimed ranges "overlap or lie inside ranges disclosed by the prior art" a prima facie case of obviousness exists. *In re Wertheim*, 541 F.2d 257, 191 USPQ 90 (CCPA 1976)." Therefore, based on the entire disclosure of Cohen there is a likelihood that a base oil is disclosed with low sulfur content less than 48 ppm and that same base oil having an aromatics content of greater than 8 based on the disclosure of Cohen.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VISHAL VASISTH whose telephone number is (571)270-3716. The examiner can normally be reached on M-R 8:30a-5:30p.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571)272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VVV

/Ellen M McAvoy/
Primary Examiner, Art Unit 1771